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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,886	07/24/2003	Robert R. Schmidt	UF-155CD3	5539
23557 7590 02/16/2007 SALIWANCHIK LLOYD & SALIWANCHIK A PROFESSIONAL ASSOCIATION PO BOX 142950 GAINESVILLE, FL 32614-2950			EXAMINER KUBELIK, ANNE R	
			ART UNIT 1638	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			02/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/627,886	<b>Applicant(s)</b> SCHMIDT ET AL.	
	<b>Examiner</b> Anne R. Kubelik	<b>Art Unit</b> 1638	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 November 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-10 and 12-28 is/are rejected.
- 7) ☒ Claim(s) 6, 7 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

1. Claims 1-28 are pending. It is noted that claim 11 was omitted in the originally field claims, and the claims are renumbered accordingly.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The terminal disclaimer filed on 29 November 2006 disclaiming the terminal portion of any patent granted on this application that would extend beyond the expiration date of U.S. Patent No. 5,879,941 has been reviewed and is accepted. The terminal disclaimer has been recorded.
4. The rejection of claims 1-4, 7-8, 10-14, 22 and 24 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6-9 of U.S. Patent No. 5,879,941 is withdrawn in light of Applicant's filing of a terminal disclaimer.
5. The rejection of claims 21-28 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention is withdrawn in light of Applicant's arguments.

### ***Claim Rejections - 35 USC § 102***

6. Claims 1-5 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Long et al (1994, Plant Physiol. 105:115). The rejection is repeated for the reasons of record as set forth in the Office action mailed 26 May 2006. Applicant's arguments filed 29 November 2006 have been fully considered but they are not persuasive.

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Long et al teach a method of increasing nitrogen metabolism in plant cells by transformation with a construct encoding a bacterial glutamate dehydrogenase, which would inherently increase the assimilation of inorganic nitrogen (in the form of ammonium) into organic nitrogen. The GDH is operably linked to a chloroplast transit peptide and the construct comprises a polyadenylation sequence. The coding sequence has been altered to use plant-favored codons. The transformed cells would inherently have increased biomass or carbon/nitrogen levels.

Applicant urges that Long et al is not enabling and fails to provide the artisan with any expectation of success, only an invitation to experiment, as no details are provided by way of DNA sequence information, plasmid source, restriction enzyme information, source organism for the gene, transformation vector or target plant species (response pg 6-7).

This is not found persuasive because plant transformation, transformation vectors and which restriction enzymes can be used to clone DNAs into them, were well-known and standard in the art at the time of publication; see, for example, all the references dating from the 1980's cited in the instant specification, in the paragraph spanning pg 14-15. Bacterial GDH's were also well-known in the art. It is noted, however, that Applicant claims a plant transformed with a nucleic acid encoding a bacterial GDH, but the specification does not teach the sequence of a bacterial enzyme - is Applicant also arguing that their invention is not enabled? Plant targeting sequences are well-known, as is plant codon optimization.

Applicant urges that Long et al do not tell whether nitrogen metabolism was altered (response pg 7).

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This is not found persuasive because the claims are drawn to either increasing or decreasing nitrogen metabolism. Long's process would inherently modify nitrogen metabolism. The instant specification shows that observable effects would be obtained.

Applicant urges that Long discloses none of their starting materials and none of the conditions under which the processes were performed (response pg 7).

This is not found persuasive because the starting materials and processes were well-known in the art.

***Claim Rejections - 35 USC § 103***

7. Claims 1-5, 8-10, 12-17 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long et al (1994, Plant Physiol. 105:115). The rejection is repeated for the reasons of record as set forth in the Office action mailed 26 May 2006. Applicant's arguments filed 29 November 2006 have been fully considered but they are not persuasive.

The claims are drawn to a method of increasing or decreasing nitrogen metabolism in a plant by transformation of a gene encoding GDH.

Long et al disclose a method of increasing or decreasing nitrogen metabolism in plant cells by transformation of a gene encoding GDH, as discussed above. Long et al do not disclose regeneration of those cells into whole plants.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of increasing or decreasing nitrogen metabolism in plant cells by transformation of a gene encoding GDH as taught by Long et al, to regenerate those cells into

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plants. One of ordinary skill in the art would have been motivated to do so to evaluate the performance of the plants in the field.

Applicant urges that Long only provides a suggestion to experiment and lacks specifics, is not enabling and an expectation of success (response pg 7-8).

This is not found persuasive. Plant transformation and the starting materials were well-known in the art, as discussed above. Only a reasonable expectation of success is required for determinations of obviousness, as taught in *In re O'Farrell*, 7 USPQ 2d 1673, 1681 (Fed. Cir. 1988). Applicant presented no arguments as to why one would not expect success from Long's teachings, and cannot, given the effects Applicant obtained.

8. Claims 1-3, 5, 8, 10, 12-14, 16, 18-22 and 26-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Coruzzi et al (US Patent 6,107,547, filed October 1994). The rejection is repeated for the reasons of record as set forth in the Office action mailed 26 May 2006. Applicant's arguments and the Declarations of Drs. Schmidt and Miller, all filed 29 November 2006 have been fully considered but they are not persuasive.

Applicant urges that the grant proposals submitted with the declarations are from before the October 1994 filing date of '547 (response pg 8).

This is not found persuasive because both the Declarations say that that invention was conceived prior to 13 April 1995, not October 1994. The dates on the grant proposals have been redacted, so they cannot make up for that deficiency in the Declarations. Thus, '547 remains available as a reference against the claims.

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9. Claims 1-5, 8-10 and 12-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coruzzi et al (US Patent 6,107,547, filed October 1994) in view of Long et al (1994, Plant Physiol. 105:115). The rejection is repeated for the reasons of record as set forth in the Office action mailed 26 May 2006. Applicant's arguments and the Declarations of Drs. Schmidt and Miller, all filed 29 November 2006 have been fully considered but they are not persuasive.

The claims are drawn to a method of increasing or decreasing nitrogen metabolism in a plant by transformation with a nucleic acid encoding a bacterial GDH and modification of the nucleic acid to use plant-favored codons.

Applicant urges that the grant proposals submitted with the declarations are from before the October 1994 filing date of '547 and Long does not make up the deficiencies (response pg 8).

This is not found persuasive because both the Declarations have April 13 1995 as the earliest date cited. The dates on the grant proposals have been redacted, so they cannot make up for that deficiency in the Declarations. Thus, '547 remains available as a reference against the claims.

10. Claims 6-7 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

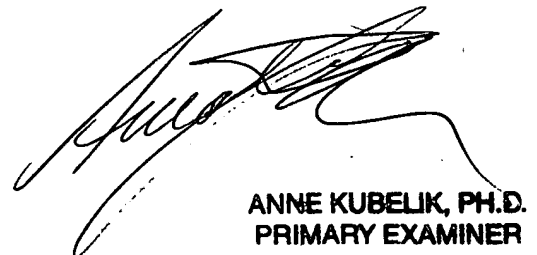
The central fax number for official correspondence is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Anne Kubelik, Ph.D.  
February 14, 2007



ANNE KUBELIK, PH.D.  
PRIMARY EXAMINER